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This article was printed from the News&features section of the *Reno News and Review* originally published June 29, 2006.

This article may be read online at:

http://www.newsreview.com/reno/Content?oid=68001

Printed on 2006-06-29 11:51:14.

Mountain or molehill?

Health problems in Yerington have former miners wondering if the mine is to blame

By Kristin Larsen

Larry Cox has holes in his feet that refuse to heal. His feet are pock-marked with reddish, unhealed craters surrounded by crusty dead skin.

He's in constant pain except in the areas near the largest ulcers, where he's lost sensation because of nerve damage. His doctor prescribed Vicodin to be taken at night so he could sleep. Yet Larry is not a complainer; he stands at least eight hours a day for his job in Fernley. But he wonders, does he suffer so much because of a job he held at a copper mine in Yerington?

He worked from 1989 to 1991 at Arimetco Mining Company, where he was regularly exposed to strong acids that destroyed blue jeans after a week.

"It looked like battery acid had been spilled on them," his wife, Renee, said.

Renee Cox applies ointment and then bandages to her husband's ankles and feet each night. Larry Cox, a former Anaconda copper mine worker, has had open sores on his feet and legs for years. The sores are a result of circulation problems, according to his doctor. They may also be related to solvent spilled in his boots at the mine.
Photo By Debra Reid

Cox couldn't wash his clothing with the children's because the children would develop rashes. He and his co-workers frequently came into contact with a sulfuric acid solution that was used to break down the minerals in the soil and separate copper from impurities. Dark blue-green solution still pools between white mountains of crushed rock tailings, red iron ore and green copper deposits.

Cox said Arimetco told him to wear steel-toed rubber boots, safety glasses, gloves and a hard hat, but that

wasn't enough to protect him. The solvent spilled into Cox's boots and dissolved some of his skin. He rinsed and wrung out his socks five or six times before putting them back on, but he still developed inch-tall blisters on the tops of both feet.

"We were told that it wasn't dangerous," said Cox, who has close-cropped hair, smile lines around golden-brown eyes and a 4-inch, pepper-gray beard jutting from his chin. "We were told that the sulfuric acid--the leach solution--that was pumped into the ground was safe and actually helped the plants grow. We were told this by the owners of Arimetco."

Cox's doctor said chemical burns alone wouldn't be enough to cause the long-term circulation damage he suffers, but the doctor never evaluated whether it could be caused by chronic exposure to mine contaminants. His feet are swollen because his leg veins can no longer return blood to the heart as efficiently as they once did. The blood collects in his lower legs, which caused the ulcers. It used to be worse, but by applying fresh bandages and gel twice a day for three months, the holes have begun to shrink slowly.

Stanley T. Omaye, a University of Nevada, Reno professor of nutrition and toxicology, said Cox's symptoms could be consistent with receiving small doses of arsenic over a long period of time. While these health problems are sometimes associated with diabetes, Cox doesn't have the disease. Arsenic, one of the contaminants found on the site, can cause blood vessel damage and skin cancer. Cox has had skin cancer lesions removed from his face in the past six months. When Cox was in Carson City to have it done, he ran into another former Yerington miner who was there for the same reason. Chronic arsenic exposure can be difficult to diagnose because there are a number of symptoms, and skin lesions can take three to 40 years to appear.

"I don't think people talk about [health problems caused by the mine] at all now," Renee Cox said. "I think most people are good-hearted and don't want to put a blame anywhere, but the ones who are getting sick are starting to question it."

The mining process creates higher concentrations of materials found naturally in the soil. In Yerington, mining concentrated uranium, arsenic, sulfates, sulfides, boron, fluoride, thorium and radium at the site. If a human is exposed to large enough quantities of certain materials, it can be hazardous and increase their likelihood of developing certain diseases.

Larry Cox is concerned he may have brought health problems home. Renee Cox said she could tell when her husband stepped in the door after a day's work on the mine because she'd suddenly have difficulty breathing. For Larry to come into the house without causing his wife to struggle for breath, he'd have to strip off his clothes on the front stoop of his suburban house, with little more than a thick-trunked tree for cover, bundle his clothes away and immediately take a shower. When Larry began work on the mine, his wife, and daughter Bethany, a second-grader at the time, started needing four to six breathing treatments a day. Later, his son in the fourth grade developed asthma. Bethany, now a duty teacher at Yerington Elementary, said every year since then, she's become ill with either pneumonia or bronchitis.

Renee said her family does have a history of asthma, but she said she would like some answers as to whether something could be done about it. According to the U.S. Department of Health and Human Services, chronic arsenic dust inhalation may be accompanied by upper respiratory symptoms, nasal perforation and lung cancer.

"We're not the only family in this community that deserves answers," Renee Cox said. "I just don't think that it's fair to put people in a position where they're working in a place where there are contaminants and not tell them. Would he have gotten cancer on his face if he didn't work at the mine? I don't know."

Got the shaft

The Yerington mine opened in 1953 as the Anaconda Copper Mine, the largest copper mine in America. An internal Anaconda memo from 1979 said that "radiological contamination" had become a problem in ponds where sulfuric solution was stored. Ownership of the mine changed hands several times until the mine's

closing in 1997. Measurements taken after it closed revealed radioactivity so high in some areas that in one eight-hour shift a worker could have received a dose of radiation that surpasses the Environmental Protection Agency's standard of a yearly dosage of radiation for those without protective gear. Yet some workers say they worked on the site without proper protection or knowledge of the danger.

Tom Dunkelman of the Environmental Protection Agency stands at the edge of the rubber-lined "mega pond" containing greenish liquid draining from adjacent mounds called "leach pads" at the former Anaconda copper mine in Yerington. Dunkelman said a new pond may be needed to help contain contaminated runoff at the mine.
Photo By Debra Reid

It came as a surprise to many when signs that read, "Radiation Area--Keep Out" were posted on the chain-link fence surrounding Yerington's former Anaconda copper mine. Some miners wondered if they were safe when they worked there.

Former Arimetco miner Brian Gibbs said he knows what it feels like to swim in sulfuric acid solution. He worked at Arimetco almost six years. When a valve broke on the bottom of a several-thousand gallon tank, he waded into the solution with green boots that were not designed for the harsh chemicals.

"You could only stay in the acid for a little while because the boots would begin to turn black, and they'd get gummy, and your feet would start burning," Gibbs said. "So you'd go through several pairs of pants before you could change the bolts out of a valve. You'd get it all over you. You had to wear polyester clothing because anything else would rot right off. "

Even as Gibbs tells of being burned by sulfuric acid, he shrugs and laughs. He's quick to point out the vicious ironies of life and turn them into a comic story. He said the electrowinning building, where they plated copper, was surrounded by a sulfuric-acid haze. Just walking into the cloud that surrounded the building caused a person's skin to itch. Inhaling it left a foul taste in his mouth that lasted for hours after a shift. Gibbs said he never saw Arimetco fit workers for respirators. Many men wore paper dust masks like those used for painting houses.

"Some of the guys in the electrowinning building, those poor guys--[Arimetco] beat those guys up bad," Gibbs said. "The biggest warning they ever got was probably to wear polyester clothes because the cotton would rot right off you." A laugh escaped out of him at the thought of the absurd working conditions. "That was one of the funniest things--ahh, it was terrible."

Gibbs said employee safety came second to company profits, and little effort was taken to protect the workers from the harsh chemicals.

"If that acid wasn't flowing through that building, they weren't plating copper," Gibbs said. "The rectifiers ran such high voltage through that building that you had to bring them down gradually, and you'd have to bring them back up gradually. So any time you had a problem, if they could fix things without pulling the plant down and slowing stuff down, they'd do it."

Tony Reali said he was never told in his three years at Arimetco that the chemicals to which he was exposed may have had consequences beyond eating holes in cotton clothes.

"I didn't know any better," Reali said. "I'd been a farmer all my life. I thought they had it down. They should have told me there was danger."

As he walked along the perimeter, Reali said the mine sits in the heart of Yerington and employed hundreds of residents. More than 5,700 people live within three miles of the site. Hills of mine tailings tower over the tallest buildings in town. The sterile slopes sit next to dark pools of leftover sulfuric acid solution once used to separate copper from the mineral-rich earth. Reali said one man had to be hospitalized after his skin was burned and blistered from falling into a pond's blue-green depths.

Mine games

The mine has been such an integral part of Yerington's livelihood that it's been an unspoken law to protect its reputation. Lyon County Commissioner and former owner of the mine Don Tibbals said the mine paid 75 percent of the county's taxes the first 15 years it was open.

"I'll tell you right now, if there were people working up there, you wouldn't get anybody to say anything, I guarantee you, unless they had a union backing them, because in this community, you'd be out of work," Gibbs said. "It's just that simple. That's the way it is here."

Some hope the mine will re-open and supply well-paying jobs to the area again.

"If the EPA would give the site a clean bill of health, that mine would open tomorrow," Tibbals said. "I think it'll take another generation [for it to reopen]. Once this generation passes on, they'll have another outlook on it."

Yerington Paiute Tribal Chairman Wayne Garcia said he believes social pressure and loyalty to the mining companies have discouraged people from coming forward. Explaining to the larger community that they may have been exposed to health hazards is just another hurdle the tribe plans to cross.

"I think there's a long line of people wanting to come forward," Garcia said. "But everything that we've heard has been that former workers are scared [and that] there may be some type of retaliation for speaking out."

Some residents say the mine is the reason Yerington isn't a ghost town. It drew hundreds of families to the rural town over the years. Elsene Domenici, 80, remembers when all the Anaconda mining families lived in the gated community of Weed Heights, where a two-bedroom house cost $25 a month. Friendships grew among the families, who worked side by side and raised their children together. It was such a small community that the one policeman didn't even need a car. Domenici raised her four children in Yerington, and her husband worked 24 years in the mine, beginning in 1954.

Penny Bassett, a senior geologist for Brown and Caldwell, an environmental engineering company, takes a radiation reading at the former Anaconda copper mine near Yerington on Nov. 30, 2004. Bassett said some areas of the mine have slightly higher than normal levels of radiation.
Photo By Debra Reid

"I always said it was a good place to raise your family, but health-wise, I wonder," Domenici said. Domenici wore a light blue dress to match her eyes and the hair clips that pulled her white hair away from her face. Sitting next to her motorized wheelchair, she held a picture of her deceased husband, Andro, from when he was 18. As a young man, he was healthy, but during his later years, his circulation was so poor that his legs were "plum purple" and covered with open sores.

"We had friends that lived down the street here that both died of emphysema a couple of years ago. ... There were a lot of women and children that came down with health problems. But it's just one of those things; you don't know what it did."

Yellow dust storms blew off the site, covering the insides of the homes with a chalky layer. Domenici said sometimes the dust would be so bad she couldn't see her backyard fence.

"In California, I dust once a week whether it needs it or not," Domenici's mother told her. "Here, it needs it twice a day."

The Agency for Toxic Substances and Disease Registry said the dust could contain metals and respiratory irritants such as sulfates and sulfides. Domenici's daughter has severe asthma, and all her children have bad allergies. For a time, she needed an oxygen tank to breathe. She recalled once asking the oxygen deliveryman if the company could make a profit driving all the way out to Yerington. She said he replied, "There's more incidences of oxygen-users in Mason Valley and Smith Valley than in any other place in this state."

Yerington Paiute tribal manager Bob Boyce said the 575 people living on tribal lands seem to be suffering from a higher than normal rate of lung and eye irritation.

"Yes, it seems like people are having asthma problems, breathing problems--you wouldn't expect that in a native population," Boyce said. "Generally speaking, non-native people are going to have the highest reaction to allergies in the environment."

EPA remedial project manager Jim Sickles said the agency spent $900,000 this year to haul away some toxic items and capped 75 to 100 acres of the immediate sources of dust with either compacted gravel or soil sealant (similar to a non-toxic latex paint) on areas prone to wind erosion.

Domenici said the road leading to the neighborhood cuts between tailing piles and alongside a toxic solvent pond. Many said houses, roads and children's ballparks were built on chemically processed mine tailings. Tibbals said even though government agencies don't allow those uses of tailings anymore, he thinks safety concerns are overblown.

"The only (negative) thing (about tailings) I can tell is that the acid will poke holes in a pipe," Tibbals said. "They're not compatible. It's like eating something that doesn't agree with you."

The U.S. Geological Survey found in 1979 that a plume of arsenic, copper, iron and other contaminants has migrated 4,000 feet north of the site, and the quality of deep groundwater is deteriorating. Anaconda never put plastic liners under the sulfuric acid solution ponds, allowing the acid to leak into the ground. Decades later, contaminants like uranium and arsenic are still being found in some domestic wells and monitoring wells. But the high amount of uranium has not been linked to the site because government agencies haven't determined what the naturally occurring amount is.

Atlantic Richfield, owned by British Petroleum, gives out free bottled water to homes where the uranium concentration comes close to exceeding the EPA acceptable drinking-water standard. According to a Nevada Department of Environmental Protection document from 2000, "The local groundwater is the sole source of drinking water for the approximately 3,000 people living within four miles of the site." Well results from September 2004 show all the domestic wells on the Yerington Paiute Campbell Reservation are eligible for free water.

Sickles said this hazard is one of the factors that prompted the EPA to propose in 2000 that the site be listed on the Superfund National Priorities List, an inventory of the worst hazardous-waste sites in America. But Gov. Guinn rejected the site listing, which would allow the EPA to clean up the site and bill potentially responsible mining companies for it later. The state of Nevada has said that voluntary cleanups are

preferable.

Digging for the truth

Even though the site is being studied for cleanup by federal and local agencies, there's still a great deal of uncertainty about the effects the mine's contaminants may have had on mine workers and their families. It seems likely to stay that way because of bureaucratic red tape.

The Agency for Toxic Substances and Disease Registry is compiling a health consultation to determine if contaminants from the mine are adversely affecting residents, but they can't evaluate hazards faced on the job or brought home by the miners. According to the consultation's co-author Mark Evans, the population most affected by the mine's contaminants are not included in the report. ATSDR does not examine conditions faced by either current or former employees, and other governmental agencies only cover those currently employed. Evans says under agency definitions these former miners may fall through the cracks.

Yerington resident and activist Peggy Pauly speaks to other concerned citizens about possible health dangers of the nearby abandoned Anaconda copper mine.
Photo By Debra Reid

"They were exposed to much higher concentrations of all these materials than anybody that's living around the site now, and trying to find the right way to address them is a very difficult problem," Evans said. "We, as any government entity, have to operate within the laws that underlie our charge, and that's just a difficult problem."

Discovering present threats from the mine is a challenge. ATSDR spokeswoman Libby Vianu said piecing together possible hazards from the past can be nearly impossible because often the needed information was never documented. She said studying the health trends of former miners would be extremely difficult because no one's been tracking them, no one is responsible for them, and ATSDR doesn't have all the records.

Uncertainty about possible health threats has prompted the Yerington Community Action Group to collect information on 271 former mine workers and their families in the hopes of doing a health study later.

"We have not had any studies done, so no one can definitively say that health has been impacted," YCAG organizer Peggy Pauly said.

Yerington families could be harmed by ignorance, either because they're worrying needlessly or because they are not aware of the cause of health problems and possible treatments. Pauly, a short brunette, said the YCAG's philosophy is to let the science drive the direction of investigation, but just soliciting the information has stirred up community emotions. When her group began compiling health concerns and symptoms, people began to approach her at the grocery store to either thank her or curse her and call her a liar. One man called her at home to say, "Anybody who gets on that registry is a whiner."

The group has been able to collect much information solely because they agreed not to release the records without the individual's consent.

But Pauly, speaking for the YCAG, requested that the mine become a Superfund site. She said because there have been multiple owners of the site, it's possible for potentially responsible parties to point the finger at

each other and [engage in] "long, drawn-out legal foot dragging." Anaconda and Arimetco have gone out of business. The Bureau of Land Management owns approximately half of the site. Atlantic Richfield and Don Tibbals have sold their portions of the site.

"Because of the ambiguity of the site ownership, no one believes they're responsible," Pauly said. "We still don't know if we're being impacted. And all the responsible parties are saying, 'It's not my responsibility.'"

But Tibbals said he fears a Superfund listing would decrease the property values of homes.

"You can make a mountain out of a molehill if you want to," Tibbals said.

Sickles, of the EPA, said national surveys show when a Superfund site is declared, there is usually a small drop in property values to land directly adjacent to the site. But once the contamination has been determined and there's someone with money to clean it up, the property values come back up.

"It's that uncertainty that drives down prices," Sickles said.

A Superfund listing isn't a guarantee of clean-up. Not all sites receive funding, and site priority is decided by the threat to human health. Sickles said while they are taking the YCAG's request into consideration, the main determining factor will be whether potentially responsible Atlantic Richfield can negotiate an agreement on the EPA's roughly 60-page draft detailing how to clean up the mine.

"Their reaction will give us an indication of how well we'll be able to work together," Sickles said.

When Pauly received radiation treatment for thyroid cancer, she followed the advice of her nuclear physician by staying in a trailer 30 feet away from the house so she wouldn't dose her children with it.

"Then I get the notice that there is radiation on the site, and I was like, 'Crap,'" Pauly said. "After we worked so hard to keep [the children] safe, they could be eating dirt in the backyard. We still don't know. Are we being impacted?"

Outside her kitchen window, a children's swing set rests inside a white picket fence. Less than a mile away, sagebrush stops at the edge of a tailings mound surrounding a sulfuric acid pond that looks more black than blue, even on a sunny day.

Pauly stares across the horizon, uncertain if she's looking at a mountain or a molehill.